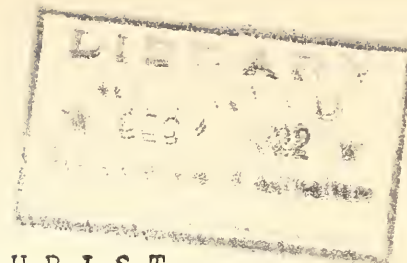


Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



THE EXTENSION HORTICULTURIST

December 1, 1922.

Horticultural workers connected with the state colleges and experiment stations all over the country are reading the reports of your work from time to time in the "Extension Horticulturist." It has always been our aim to tell what the other fellow is doing and how he is doing it. In this issue we are giving brief reports from the specialists who are conducting work in the Northeastern group of states. The idea has met with favor and will be continued.

The January number of the "Extension Horticulturist" will be our annual editorial, but we hope to include in it reports from Ohio, Indiana, Illinois, Michigan and Wisconsin.

The material contained herein is not for publication except by permission from the Office of Horticultural and Pomological Investigations.

Office of Horticultural and Pomological Investigations
and States Relations Service Cooperating,
U. S. Department of Agriculture,
Washington, D. C.

MARYLAND.

During the past ten years extension work has been developed in Maryland in all lines of agriculture. Prior to that time considerable work was done along horticultural lines, but because of a limited amount of funds and number of trained workers, work of this nature was confined almost entirely to the activities of the State Entomologist and State Horticulturist, who could give field work only such part of their time as could be spared from class room duties and activities of the Experiment Station. As a result it was practically impossible to cover the entire state and little could be accomplished, except in certain individual instances where direct personal contact could be secured.

Since the development of the extension work, which brought about an increase of available funds and subsequently the securing of more workers, it has been possible to carry on horticultural extension work all over the State. Owing to the fact that in each of the 23 counties there is a county agricultural and home demonstration agent, it has been possible to reach every available section and provide services on a very broad scale.

In addition to the individual work which has been carried on by the Specialist in Horticulture, considerable service has been rendered in an advisory capacity to each of the above named agents. By this means it has been possible to encourage an increased planting of orchard and small fruits, truck and garden crops over the State, and to encourage a greater development in more profitable methods of production; thereby increasing the value of commodities produced and ultimately making these lines of endeavor more profitable to the individual growers.

In a similar manner - direct contact with the school children has been obtained through the development of boys' and girls' club activities and by cooperation with the leaders in this work. Cooperative projects have been outlined which make it possible to develop horticultural work with the school children.

Closer relationship has been brought about between the fruit growers of the State and the extension work through the activities of the Maryland State Horticultural Society. By this means the Specialist in Horticulture is in close and direct contact with most of the growers of the State. This contact is systematically maintained throughout the year by the holding of a summer field meeting and a winter conference and by the issuing each month of a news letter which affords an avenue of giving timely suggestions and advice relative to the production of fruit and truck crops. Closer contact with the agriculture of the State is maintained by the affiliation of this organization of horticulturists with the State Agricultural Society. By means of this organized endeavor, greater and more definite service has been rendered the fruit growers of the State in that closer contact has been established with them, thereby making it possible to render more efficient service in the solution of their problems. It is possible to disseminate quickly and efficiently information of value to all parts of the State; it is also possible to secure valuable data necessary to the development of extension work.

The project for 1922 has been to make more profitable the production and ultimate marketing of fruits and vegetables. The two outstanding

problems in bringing about this result are - 1. Improvement in Quality; 2. More Careful Grading and Packing. The work has been organized so as to correlate the efforts of the Specialists in Entomology, Plant Pathology and Marketing, working in cooperation with local county agents. The outstanding activities are as follows:

CLASSIFIED ORCHARD PROJECT DEMONSTRATIONS: The grower follows directions outlined by the specialist and county agent and observations indicate that where the directions regarding cultural methods and proper care of the trees including pruning and spraying, have been carried out, excellent results have been obtained.

ADVISORY DEMONSTRATION ORCHARDS: The nature of this work has been to assist the county agents in the solution of their specific problems and to encourage production of better fruit and garden crops.

FIELD MEETING DEMONSTRATIONS; At the request of county agents, demonstrations in pruning, mixing spray materials, spraying, picking, grading and packing are conducted.

MARKETING PROBLEMS: A market survey has been made to ascertain (1) consumers preference in securing fruits and vegetables on the market; (2) varieties of apples, peaches, pears and small fruits most in demand; (3) number and variety of fruit trees planted in Maryland. Considerable attention has been given to a better grade and pack in Maryland and assistance was rendered in developing the work of the local packing house unit.

PUBLICITY: Information is disseminated through the press notices, spray calendars, bulletins and correspondence; meetings of farmers and fruit growers organizations are addressed on horticultural subjects. Through these channels particular emphasis is laid upon the necessity for improving the quality of fruit grown in Maryland and the value of such practices in the ultimate marketing of the crop.

S. B. Shaw,
Extension Horticulturist,
College Park, Maryland.

PENNSYLVANIA - VEGETABLE WORK.

In Pennsylvania we have just harvested the last of our demonstrations this week (November 10). The project work this year has grown very satisfactorily. There is an increasing interest for the work and the growers are awakening to the good local opportunities in growing vegetables.

One of our main projects for the past three years has been variety and strain demonstrations in which we try to locate for the growers the best source of seed. We believe that there is no other element that enters into vegetable production that will bring to the grower as great cash returns for the energy and money expended as the use of the best seed.

EARLY CABBAGE: This year we made a comparison between the two leading early varieties of cabbage - Copenhagen Market and Early Jersey Wakefield,

using five sources of seed of each variety. This work was carried on in nine counties. We found as much as 100% difference in cash returns from different sources of seed of the same variety, due chiefly to uniform early maturity. There was a greater difference between sources of the same variety than between the two varieties, and the best source of each variety was on a par for earliness.

LATE CABBAGE: Danish Ballhead is the only variety used in this work. Seed is procured from the leading seedsmen of the State and compared. It is really surprising to see the difference in maturity, type of head and stalk, solidity and even quality. This year we secured an average difference of seven tons per acre between the best and poorest. The relative positions in yield were nearly the same in all demonstrations. This work was carried on in twelve counties.

TOMATO DEMONSTRATIONS: With this work we use different varieties as well as different sources of the same variety. Here again there are great differences in yield and type in the same variety. Differences of three to six tons per acre are not unusual. I might say that this kind of demonstration work is very fine to use as an entering wedge in a hard shelled community. Hold field meetings when the demonstration is at its best and make it both educational as well as figuring out the profit. In these demonstrations you are bound to get great differences and you have opened the way for other work later. Thirty-six demonstrations were conducted.

MISCELLANEOUS: Some of the other lines of work that were not state-wide but had a local application were (1) muskmelon variety demonstrations in which eight varieties mostly of the Rocky Ford type were compared. (2) Fertilizer demonstrations on different crops, especially the use of nitrogen and phosphorus. (3) Grading demonstrations on curb markets. (4) Assistance in establishing overhead irrigation systems. (5) Assistance in constructing greenhouses, especially small plant houses and coldframes. (6) Judging horticultural products at fifteen county fairs and a greater number of community shows. Educational programs in connection with community shows. (7) Attended over forty-five scheduled meetings with a total attendance of 3,450 people. (8) Delivered timely talks over radio from Westinghouse Electric Company, Pittsburgh. Estimated total attendance - 100,000.

W. B. Nissley,
Vegetable Specialist,
State College, Pa.

NEW JERSEY - FRUIT WORK

New Jersey has two well defined districts in which extension work in fruit growing must be carried on. South Jersey contains the large commercial orchards, while North Jersey has innumerable and important small farm orchards. Although the latter only produce about 15 or 20 per cent of the fruit crop of the State, the calls for work from their owners are very numerous. Two types of demonstrations are carried on, - the more specialized demonstrations in the commercial orchard districts, and the general orchard management demonstrations in the other districts. As districts develop the more advanced type of demonstrations are scheduled. The demonstration work may best be described under group headings.

I - ORGANIZATION.

1 - County organizations: Fruit project committees are functioning in 18 of the 19 agricultural counties, assisting in the drawing up and carrying out of the program of work in the counties.

2 - Fruit growers organizations: Three local fruit growers organizations were formed, which hold monthly meetings at which horticultural practices are discussed. Cooperative buying is another important activity of two of the associations. A fourth association is just being started. Two community marketing organizations were fostered in cooperation with the State Bureau of Markets, and are actively working. Assistance was given to State and county horticultural societies, and to the Growers Cooperative Association.

II - INSECT AND DISEASE CONTROL.

1 - Spray card service: A card notification system was organized reaching 4,855 apple growers, 4,060 peach growers and 2,200 cherry growers. Cards were sent out from the county agent's office when each of the sprays were due, telling when to spray, what to use and the pests to be combatted.

2 - Control of Peach Borers with Paradichlorobenzene: Fifty-four demonstrations were staged in the State in 1921 and concluded in April 1922. Service cards were sent out this fall to 4,060 peach growers telling when and how to use the material. Its use is now an established practice.

3 - Spraying demonstrations: Nine apple spraying, 3 peach spraying, 2 cherry spraying, 1 grape spraying, 1 gooseberry spraying, 1 peach dusting versus spraying, 4 strawberry weevil dusting, 1 spray materials comparison and 2 pear psylla control demonstrations were carried on during the season. Results were quite generally satisfactory.

III - PRUNING DEMONSTRATIONS.

1 - General pruning: Eighty-nine demonstrations on pruning were held. These are largely carried on by the county agents to take care of the great number of calls for pruning assistance, and they are generally well attended. A discussion of almost all phases of orchard practice usually ensues.

2 - Long time pruning: Seven long time apple pruning demonstrations are under way, in which comparisons of methods of training and pruning are shown. Five of these are on young trees, just planted from 1 to 3 years. Two are on old trees, and are showing plainly the benefits of moderate heading back, thinning out, etc. Two long time peach pruning demonstrations are under way, but frost took crops the last two years. Nine peach renewal pruning demonstrations are under way, in most of which short dehorning, and heavy cutting back are compared. These have aroused considerable interest in the commercial sections. Four grape pruning demonstrations are under way comparing the two-wire Kniffin system with the prevalent one-wire system. Striking increases in yield ranging from 20 per cent to 182 per cent have resulted from the use of the Kniffin system.

IV - DEMONSTRATION ORCHARDS.

Twenty-two demonstration orchards have been conducted, as accurate as possible records being kept of all costs and returns. Some remarkable results have been secured, and the value of the small farm orchard of from 40 or 50 to 200 trees, especially near our big consuming centers, has been strikingly shown. These demonstrations have been popular and valuable in our less important fruit districts. One of the chief purposes is to induce the dairy farmers in the northern end of the State to diversify, and secure an income from an additional source.

V - MISCELLANEOUS DEMONSTRATIONS.

Eight cover crop and cover crop comparison demonstrations were staged, one fertilizer demonstration, 4 demonstration peach orchards, 3 grafting demonstrations, and several other demonstrations were carried on during the season.

In closing, I would like to state a problem. On the whole our demonstrations have shown profits in a clear-cut way. The growers profess interest in the results, but the following year they so involve themselves with other crops and other activities that they are unable to find time to put some of the recommendations into practice. I would like to hear how some of the other specialists sell their results. How do they organize the follow-up work after a spraying demonstration, or a demonstration orchard, or a cover-crop demonstration to secure the largest results? This follow-up work - the actual selling of the proposition is our most important problem, and we could use information along this line.

A. F. Mason,
Specialist in Fruit Growing,
New Brunswick, N. J.

NEW JERSEY - VEGETABLE WORK.

Vegetable extension work in New Jersey for the current year covered 114 scheduled demonstrations in all of the counties with the exception of four. These demonstrations were carried on entirely through the county agents with the exception of the cooperative work, carried on through the departments under joint projects. For instance, aphids attacking vegetable crops in New Jersey were destroying a large percentage of many of the crops, and a joint project was drawn up with the State Entomologist for carrying on this work. Two power spray machines, and a large power duster were furnished by commercial concerns. The State provided a Reo Speed Wagon for the conveying of this equipment over the State. These machines and transportation was provided by the Vegetable Specialist, while the Entomologist furnished the materials and men. Due to this cooperation definite results have been secured for the control of aphids, and other insects, by the use of spray and dusting material. The records are being assembled and will appear in the Specialist's annual report and in a special bulletin by the Entomologist.

We attribute the success of our demonstrational work to our method and plan of organization, which is as follows:

In every organized county of the State we have a vegetable project committee, the chairman of which is a member of the Executive Board of the County Board of Agriculture. This committee is composed of one man from each community, either elected or appointed by the community organization to represent the vegetable interests of the community. Once a year we hold a meeting of all of these representatives within the county, at a central location. At this meeting the program of work is decided for the following year. At this meeting the members of the committee make known their troubles or suggest demonstrational work which might be carried on in their community. When all of these suggestions are tabulated then the entire committee go over the list again and select the most important ones from the county standpoint. By outlining the demonstrational work in the county in this way the committee passes on the program of work and is made responsible to a certain extent for securing demonstrators and helping to put the work across. This is the fourth year that this system has been in working order in two of the counties in the State and every meeting becomes more interesting as the growers feel their responsibility in this work.

Work has been conducted with 18 different vegetables in the State, but it would be impossible to include all so I will mention only a few of the outstanding results.

Last season celery spraying for blight control was confined to Bergen and Passaic Counties. The results secured were very striking, particularly the yields of sprayed over unsprayed sections. Meetings were held in both Bergen and Passaic Counties on the demonstration plots in the fall when the results showed best. As a result of this spray work quite a few sprayers were purchased in north Jersey for celery spraying. It is true in this State as in the other states that the majority of the growers in the community will not follow proven demonstrations but will take another chance. This year the majority of those men who did not spray, but took another chance lost practically all of their celery, while their neighbors who did spray according to recommendations harvested practically a 100% crop.

Twelve muskmelon variety demonstrations were conducted in the muskmelon growing counties. Each demonstration contained 11 varieties. Meetings were held on the majority of these demonstrations at the time of ripening of the melons to determine, if possible, a better strain or variety than that commonly grown in the county and with the idea of standardizing the product. Three muskmelon spraying demonstrations were conducted for the control of blight which resulted in the holding up of the foliage fully 3 weeks later than the unsprayed foliage which allowed ample time for a large amount of fruit to be marketed.

Although only a minor demonstration, and the second year, cabbage maggot control work was carried on in practically all counties. Last year Camden County had 3 demonstrations, and as a result of these demonstrations this year there were over 200 pounds of corrosive sublimate purchased by the cabbage growers in this county. In the small section of Sussex County, near Port Jervis, New York, the growing of early cabbage was practically abandoned. As a result of one demonstration in that community last year the normal crop of cabbage was planted this year and harvested, overcoming the destructive effects of the maggot.

Last year there were 8 sweet potato variety demonstrations in as many

counties in south Jersey. These demonstrations included from 8 to 14 varieties of sweet potatoes. At the meetings held on those plots at digging time last year the growers decided that they wished to stand by the Yellow Jersey type and not grow any of the larger types, such as Nancy Hall, Pumpkin, Porto Rico, etc. As a result of the work last year the work carried on this year consisted of strain tests, which included strains of the Yellow Jersey type from the best growers of the various counties. Other work with sweet potatoes included the construction of flue heated hot beds, seed and soil sterilization and storage work.

Soil sterilization work was conducted in quite a few counties of the State. The majority of this work was carried on in sweet potato, pepper, and eggplant beds for the control of damping off.

A cooperative project was carried on with the State Entomologist for the control of the onion strip which causes great losses on onions and leeks in the State. Various forms of sprays were used as well as the nicotine dust. Very good and conclusive records were secured which will also be published in the annual report of the specialist. Next year acre plots will be treated and definite comparative results secured.

Last season the specialist made eggplant selections from plants presumably resistant to the wilt. Seed of these selected plants was placed in frames this year and very noticeable results were secured. Seed was again saved which will make the second selection to be used again next year. It was also demonstrated that the woody plants from the hotbed should be discarded altogether when setting into the field.

Sweet corn seed improvement has been carried on in Bergen County for 4 years with the goal of better and more uniform seed and standardization of strains and varieties in the county. This work was started by the ear to row method and developed now to the breeding plot. Other counties have also started this work this year with the idea of standardizing from the community or county standpoint.

Other demonstrations include asparagus, lettuce, lima bean, pea, cucumber, horseradish, spinach, pepper, and tomato work in communities where these crops dominate.

C. H. Nissley,
Specialist in Vegetable Gardening,
New Brunswick, N. J.

NEW YORK - FRUIT WORK.

Horticultural extension work in this State is divided into 3 departments, vegetable gardening, floriculture and ornamental horticulture, and pomology. This article relates only to the pomology program. The pomology program for the past year has been rather broad and well balanced, including the following sub-projects: (1) Pruning fruit trees, (2) Orchard soil management, (3) Grafting fruit trees, (4) Small fruits, (5) Grapes, (6) Home fruit improvement, (7) Fruit packing houses, and (8) Thinning.

While all of these sub-projects have received some attention, the ones

enumerated first have been the most popular and have had the most time spent on them.

Two types of pruning demonstrations have been offered; namely, the single pruning demonstration and the long term pruning demonstration. The single pruning demonstration is, of course, the ordinary affair, demonstrating the method of pruning and emphasizing the principles involved and the response of the tree. The long term demonstration is generally organized on a 5-year basis pruning a definite number of trees and coming back to these same trees each year. In this way the growers of the community are brought face to face with the effect on the tree of the work done, and the demonstration becomes very convincing, whereas in the ordinary pruning demonstration, few, if any, ever return to view the results. A keen demand continues for this type of pruning demonstration and some of the counties are confining their pruning work altogether to the long time project. There are 30 such demonstrations now under way in 8 counties.

The soil management program includes such practices as fall plowing, early spring cultivation, cover crops and fertilization. While some demonstrations are used, other methods such as community meetings and extension schools have figured more largely in advancing the new ideas in this field. It is generally true that fertilizers in any form are not needed in New York orchards, but a sharp distinction must be drawn between cultivated orchards and sod orchards. Cultivation is, of course, the rule in this State and hence the general conclusion in regard to the value of fertilizers. In sod orchards, however, nitrate of soda has given rather marked benefits wherever used.

There has occurred a very decided increase of interest in the problems of grape growing. The present economic conditions prevailing are undoubtedly responsible for this, as grapes are now probably the most profitable fruit crop in the State. Fertilization is the most important of the questions that arise in connection with the vineyard work. Fertilizer demonstrations have been held this year in the Chautauqua and Erie grape belt and in the Hudson Valley. The work this year indicates the value of nitrate of soda in the vineyard as compared with muriate of potash, bone meal, and phosphate. This was especially pronounced in the Hudson Valley. The growers in that section have used almost exclusively potash and bone, and there seems little question but that much of the fertilizer applied is wasted. The results of the demonstrations, therefore, are very significant and many growers are beginning to see the light.

The other sub-projects have been advanced as occasion and needs justified. The fruit thinning demonstrations are showing up well and are destined to become more prominent in the future.

M. C. Burritt,
Vice Director of Extension.
Ithaca, N. Y.

Joseph Oskamp,
Fruit Specialist,
Ithaca, N. Y.

MASSACHUSETTS - FRUIT WORK.

The work in Fruit Growing has the following as major projects:

1. Management Demonstrations in Apple and Peach Orchards: These long time demonstrations are concerned chiefly with the problems of production and the cumulative effects of good management. Special emphasis is placed upon proper soil management, pruning and spraying, and upon the necessity for and the place of each in growing high grade fruit. Forty-six of these orchards are being carried under the immediate supervision of the county agents, supported by material and supervisory assistance from the Extension Specialist.

2. Demonstration Home Fruit Gardens: Massachusetts has large suburban communities - almost suburban counties. These demonstrations are established to acquaint the home owner with the value of a fruit garden, the best varieties and the proper care of the plantation. We have seven, handled like demonstration orchards.

3. Fertilization and Spraying Demonstrations: Special fertilization and spraying plots have been established in sections where either problem is outstanding and where it has not seemed advisable to locate management demonstrations. The fertilizer plots are organized to run for an indefinite number of years, or until the treatment has demonstrated its full value. The spray plots are concerned primarily with apple scab. We have 38 such plots this year.

4. Small Fruits: Successful strawberry weevil control demonstrations have been conducted in one district - the first to be infested. Seven strawberry and raspberry variety plots have been established to demonstrate the best varieties in the several sections. We have a wide variation in soil and climatic conditions and the variety problem needs systematic study. We hope to make these plots sources of disease-free plants.

5. Fruit Clubs: We are gradually feeling our way ahead with junior fruit clubs, and plan to make a feature of them next year. We have one apple club and three small fruit clubs.

R. A. Van Meter,
Fruit Specialist,
Amherst, Mass.

MASSACHUSETTS - HORTICULTURAL MANUFACTURERS.

Work in this project, Massachusetts Extension No. 29, for the 1922 season has been organized to emphasize two lines of endeavor; (a) Home production of jams and jellies, and (b) Farm storage.

The work on home production has been along the line of the spreading of information on new and better methods as developed by the Department of Horticultural Manufacturers at the College.

This effort has been expended through Lecture-Demonstrations to groups of leaders and housewives. The meetings have been arranged by the County Extension Services and have been quite uniformly successful. There has been

held a total of 100 of these sessions and the total attendance has run to over 2,000.

A rather simple follow-up by means of a questionnaire has been started. This is for the purpose of determining, if possible, to what degree the teachings of these demonstration meetings have been passed on to others who were not in attendance. Replies so far received indicate that the spirit of extension work was well assimilated by those attending these meetings.

In addition to these scheduled meetings, the Specialist has devoted about 20 days to individual and special-group work on canning and production for sale. The effort on production for sale has so far been small, but increasing each year, and it promises to be one of the more important parts of the project.

Farm storage demonstrations are being carried on in 6 locations. These demonstrations take the form of personal service in planning, building, equipping and operating such farm facilities. Demand for such help is largely from apple growers, but the root-storage problem also receives a considerable amount of attention.

A new item in the work of the Specialist has been the development of canning and manufacturing for sale by groups of junior extension members. It promises to become a very important and valuable part of the project.

W. R. Cole,
Specialist in Horticultural Manufacturers,
Amherst, Mass.

MASSACHUSETTS - VEGETABLE WORK.

The extension work in vegetable gardening in Massachusetts has centered at the Market Garden Field Station at Lexington, where considerable experimental and some extension work is conducted near the center of the vegetable gardening industry of the State.

The extension projects in vegetable gardening which have received the principal attention of the vegetable gardening specialist and county agents during the past year have been:

1. A demonstration of improved varieties on market gardens, particularly varieties of tomatoes, and lettuce. We have had reports from several of the county agents indicating that growers in their territories have succeeded in locating improved varieties of these crops as a result of this demonstration work, and this is likely to cause quite an improvement in quality of production in certain districts.

2. Cabbage maggot control. During the past 2 or 3 years vegetable growers in Massachusetts have suffered very seriously from attacks of the cabbage root maggot. For 2 successive years a demonstration was conducted at the Market Garden Field Station, indicating to what extent the tar felt disc control method affected yields. Building on this demonstration and the interest aroused thereby, considerable use has been made of the method throughout the State, under the direction of the county agents and much to the satisfaction of vegetable growers. Some 200,000 of the tar felt discs were used in eastern

Massachusetts last year. The corrosive sublimate treatment has been tested to only a slight degree, and it is too early to tell what Massachusetts growers think about it.

3. Celery blight control has been one of the most important of projects which has received attention for the last 3 years. During 1922 Massachusetts celery growers have suffered more from celery blight than ever before in the history of the state. It is requiring just such a condition to bring men to the understanding that it is necessary for them to protect themselves against this disease. To illustrate what has happened in several instances this year, I quote from a letter of November 6 from one of our leading market gardeners. It is in answer to a letter which the writer sent to the market gardener after having received a stalk of wonderfully fine celery, by parcel post.

"The stalk of celery I sent you was taken off a piece that wasn't worth a nickel August 3. I had already told my man to plow it up. After talking with your pathologist at the Field Meeting at Lexington, August 2, I decided to spend some more money on it, and see if I could stop the blight. I would not say that it was my good judgment that caused me to spray it. For the first 3 times I sprayed it I felt like a fool for throwing away my time and materials, but after that it began to get better until when we sold it there was practically no blight in sight. On that one piece there were 125 rows, and we took about 14 dozen to a row, and sold mostly two in a bunch. The whole field would average better than \$1.60 per dozen, so I guess it paid all right to spray. We sprayed our early celery 7 times after the 3d of August."

Two of the county agents have conducted celery blight control tours this fall, and stimulated a good deal of interest in preparation for a celery spraying campaign in 1923.

4. Testing of spinach seed grown at the Market Garden Field Station for blight resistance. The fall spinach crop in Massachusetts has been very seriously damaged by "yellows" for some years, as it has been in the Norfolk, Virginia section. Thanks to the cooperation of Prof. T. C. Johnson, we received a sample of seed from Norfolk some 3 or 4 years ago, which proved very "yellows" resistant. We saved enough of this to produce some 30 pounds of seed the following spring, which we distributed through county agents to market gardeners, with the instruction to grow seed from this for their own use. This seemed necessary because of the limited amount of seed which would be available for some years, and the great demand for it through the Virginia section, which would prevent any supply reaching this part of the country. Results have been very satisfactory from this distribution.

In addition to the extension work which has been conducted, both at the Market Garden Field Station at Lexington, and in various parts of the State, under the direction of county agents, the following projects have received attention at Lexington:

1. Demonstration of selected Washington asparagus.
2. Demonstration of the comparative value of small and large asparagus roots, relating to vigor of growth.
3. A limited variety demonstration of some ten different market crops to include the exhibit of new and improved varieties.

4. Some home seed production to gather data on yields, and encourage interest in this work.
5. Celery blight control demonstration coupled with an experiment on the use of dust.
6. Green manure crop tests, and a demonstration at the last two annual field days, of plowing under green manures.
7. The "Diabetic Garden" demonstration, to interest folks in the cultivation of some new vegetables demonstrated by Dr. Orton as of particular value, as well as grouping together other vegetables which are particularly suitable for a person suffering from this disease.

It has been more and more clear that the experimental work being done in addition to the above projects at the Market Garden Field Station has offered much demonstration value. Its location in the immediate vicinity of the vegetable gardening of the State, makes it accessible to growers who are frequently inspecting this work and modifying their farm practices accordingly.

There is a monthly report of extension work for market gardeners mailed each month which comprises four pages of the ordinary bulletin size, and takes up timely topics and reports of extension work of current interest.

H. F. Tompson,
Head of the Department of Vegetable Gardening,
Lexington, Massachusetts.

CONNECTICUT - FRUIT WORK.

1. Demonstration Apple Orchards: About 35 demonstration apple orchards have been conducted in various sections of the State. In each of these the Specialist has outlined a definite program for the cooperators to follow, including pruning, spraying, soil management, thinning (when necessary), control of apple tree borers, protection of trees from mice, grading, packing, and marketing. Only those orchards in which the pruning, spraying, and soil management directions have been closely followed have been termed "demonstration orchards." The figures for the season of 1922 are not yet in except in a few cases, but some will show quite remarkable results. In one orchard which is in sod, and which has been treated for two years, the demonstration plot will show a 500 per cent increase over the check plot. Another orchard which has been supervised for only one year and which consists of less than 300 trees, has produced over \$3000.00 worth of fruit this year. (Was this a demonstration orchard? Editors)

2. Raspberry Variety Test Plots: Eight raspberry variety test plots were started in the State during the spring of 1922. The following varieties were put under test: June, Herbert, Perfection, Latham, Marlboro, Cuthbert, Erskine Park, St. Regis, Plum Farmer, Columbian and Cumberland.

During the next few years accurate records will be obtained for the different varieties. From the standpoint of growth of the plants and freedom from disease which has been carefully checked up during the last few weeks, the Cuthbert, Latham, and St. Regis stand at the head of the list at Present. (This looks like experimentation rather than demonstration - Editors.)

3. Strawberry Variety Test Plots: Six strawberry variety test plots were started during the spring of 1922. These have included a test of the following varieties: Howard 17, Glen Mary, Sample, William Belt Abington, Superb, and Progressive and any others of local adaptation which the cooperator cared to test. Accurate yield records will be obtained during the spring of 1923; but from the standpoint of the growth of the plants which has been recently checked, the Howard 17 and Sample stand out as the two best varieties in every case. (This looks like experimentation rather than demonstration - Editors.)

4. Spray Rings: In order to test the practicability of spray rings for Connecticut conditions, four were organized in one county during the past winter and these have been in operation for one season. These spray rings include from 6 to 20 growers each, and all have come through successfully. Power outfits ranging from a cost of \$275.00 to \$600.00 were purchased, and a manager has cared for all the spraying. In this way farm orchards ranging from 15 to 100 trees each have been sprayed 3 to 5 times which formerly were not sprayed at all.

5. Orchard Fertilizer Demonstrations: These demonstrations have been placed with an idea of testing the value of commercial fertilizers, especially nitrate, on the various orchard soils of the State. These demonstrations have been especially adapted to the commercial orchardists who at present are pruning and spraying fairly effectively but whose trees lack vigor and productiveness. It is expected that this type of demonstration will be greatly increased during the season of 1923, due to the remarkable results which have been obtained in many instances from the use of nitrate in sod orchards.

6. Publicity Work: The publicity work has included numerous articles published in the Extension Service News and other papers reaching Connecticut farmers, such as the New England Homestead. Frequent circular letters have been mailed to a fruit list consisting of over 1,000 fruit growers. In some cases this has included a summary of recent bulletins received from other states. Three bulletins have been published, one covering in a general way the fruit industry of the State, one on pruning, and one on spraying.

W. H. Darrow,
Extension Fruit Specialist,
Storrs, Conn.

CONNECTICUT - VEGETABLE WORK.

The work in vegetable growing during 1922 has covered 14 different projects:

1. Beet Strain Demonstration: Object: To demonstrate the superiority of beet seed (Crosby's Egyptian) from several sources. The results were based on a percentage marking, including color, both exterior and interior of roots, and other characteristics of a high class product. In this demonstration the six seed firms that stood at the head of the list showed a variation of 80% for the highest and 38% for the lowest, others being lower than 38%

2. Boys' and Girls' Club Work: Reports have not been received at this

writing. In general the clubs have had a profitable season. The boys and girls have learned the principles of vegetable growing, marketing, and producing profitably. There were 16 cooperators.

3. Copenhagen Market Cabbage: Strain demonstrations to compare four of the best strains. From 12 cooperators having kept and turned in their reports thus far, considering the total yield per acre, average size of heads, per cent true to type, per cent ready to cut July 15, the results showed a variation between 92% and 84% for the four seed firms heading the list.

4. Danish Cabbage: Comparative demonstration and also for the purpose of teaching the men in the State the value of this little-known crop as far as Connecticut is concerned. Considering yield per acre, trueness to type, and other characteristics of Danish, the results showed a wide variation.

(Note - Extension workers desiring the list of seed firms furnishing the seed for the above comparisons can secure them by writing to Mr. Wilkinson).

5. Insect and Disease Control: This demonstration covers a number of lines:

(a) Maggot control with corrosive sublimate: All cooperators report 95% control or better.

(b) Nicotine dust to control lice: Two cooperators report 95% control or better with the pea louse. Several cooperators report excellent control of the cucumber beetle on cucumbers, melons, and early squash.

(c) Dusting celery: Excellent control has been obtained for early blight; a questionable control with late blight.

(d) Dusting potatoes: This has prolonged the crop from 10 days to 2 weeks as compared with no dusting.

(e) Spraying potatoes as compared with no spraying, has showed a marked increase due to spraying.

(f) Use of sulphur on potatoes as an aid in the control of scab has again indicated quite clearly on several of our leading farms that control can be obtained where 600 pounds per acre is used. A cover crop following or the succeeding crop thus far have not indicated any deteriorating influence from the use of sulphur.

6. Marketing: Various demonstrations have been established.

(a) Advertising to stimulate demand in the City of Norwich through the Vegetable Growers Association. Twice a week an ad. has been placed in the local papers.

(b) A change in the packages used and the grades included in the package with the New Haven, Highwood, and Hartford Vegetable Growers' Associations. This has increased the money return. It has been particularly noticeable where the New Haven growers have shipped to Boston and a study of the increase made.

(c) Work on standardization of the weight of the bushel of product and on the standard box. This has been carried on with all local vegetable growers' associations and the State Vegetable Growers Association at Bridgeport being the association in the lead.

7. Methods of Crop Growing, being centered around pruning tomatoes in the beds before transplanting, and staking tomatoes - two entirely different pieces of work. The gain from pruning has been in advance in the earliness of the matured fruits, due to the fact that pruning stimulates lateral growth. Thus growers have obtained early yields, and, therefore, more money. A number of cooperators have worked on this point

Staking Tomatoes: This has brought out the fact that Earliana No. 1 fruit in high production per acre can be obtained. There are a number of cooperators that have carried on staking tomatoes for the first time. They intend to do so another year.

8. Miscellaneous.

- (a) Work with introducing a new variety of asparagus. About 6 growers are now growing Washington asparagus and are very favorably impressed.
- (b) Several growers have grown cauliflower following directions given and in each case topped the market with its high quality. Cauliflower is rather a new crop for Connecticut
- (c) A comparative demonstration with varieties of early corn has been carried on similar to the work in 1921.
- (d) Two strains and two varieties of celery have been compared with those already growing in the State.
- (e) Carrot strains of the Chantenay variety have been worked on, indicating that there is a vast difference between sources of seed of this variety.

9. Irish Cobbler Potatoes: A strain demonstration in which 7 or more strains have been compared on 15 cooperating farms throughout the State. The results have shown a variation between 202 and 332 bushels per acre.

10. Green Mountain Potato Demonstration: In a similar way Green Mountain strains have been compared, 13 cooperating farms growing the same. The results vary from 187 to 231 bushels per acre.

11. A number of demonstrations have been worked out with fertilizer, the majority of the demonstrations being concerned with the relation of fertilizer to potatoes. The recommendations of the Connecticut Agricultural Experiment Station have been sustained in practically every case, that is 4-8-4 fertilizer is the average analysis for the State of Connecticut. The amount of 4-8-4 has been determined as one ton per acre.

12. Soil Improvement: A number of cooperators are growing crops for the particular purpose of improving their soils. Rye, buckwheat, soy beans are the particular crops sown in the summer. For the fall and winter rye, vetch and rye, are being used. There is a marked increase in the use of these crops.

13. Tomatoes: A strain demonstration of Bonnie Best, using 4 excellent strains, showed a difference of only \$610.00 and \$679.00. The difference in money returns is entirely due to the time of yield.

14. Organization: Connecticut is a very active State as regards its vegetable growers' associations. A definite program of work is followed in each local association, the program of work being uniform for the State each month. Each association has 12 lessons in vegetable growing.

The State Association held an excellent field day on a farm where several demonstrations were being conducted and where all the growers could inspect them carefully. In a similar way a State vegetable field tour has been conducted, visiting 8 farms, each farm having one or more demonstrations. The State Association has also placed a few vegetable exhibits, one at the Eastern States Exposition at Springfield, and one at the exhibit during Agricultural Week at Hartford. At the latter time the vegetable growers have a 2 day annual meeting. A large per cent of the growers of the State attend.

Albert E. Wilkinson,
Vegetable Specialist,
Storrs, Conn.

Field Trip of Prof. C. P. Close.

IOWA.

Iowa has a strong force of specialists doing fruit, landscape and vegetable work. Messrs. Nichols, Kocken and Holland do the tree fruit work, Mr. Cornell does the landscape work, Mr. Holsinger does the garden and small fruit work, and Mr. Fitch does the truck-crop work.

The fruit specialists held three 1-day pruning schools in each of 34 counties. These were in cooperation with women food specialists who discussed food problems with the farm women. At noon the men and women enjoyed dinner and a social hour together. The dual orchard and poultry demonstrations started several years ago were continued this year, 109 being given in 33 counties. The summer spraying of apples now in its tenth year of demonstration gave fine results. The averaging crop value per tree of the 2,100 trees in 23 demonstration orchards was \$6.00 for check trees and \$12.00 for sprayed trees. Spraying work is growing, 268 new rings being reported in 59 counties. County agents reported a total of 654 spray rings in operation this year, 213 using power sprayers and 441 using hand pumps. In the permanent orchard demonstrations cost records are being kept of all work. Mr. Cornell started 45 landscape demonstrations this year, these are on farmsteads, school and church grounds, in parks, etc. He has held 152 outdoor demonstration meetings, given 48 illustrated lectures, judged at a few fairs and reached nearly 4,000 people with his message on landscape improvement.

Mr. Holsinger is conducting his garden and small fruit work in cooperation with home demonstration agents as well as with county agents. Demonstrating the control of diseases and insects is an important part of his garden work, especially in cities and towns. He has stressed the fall garden, especially the growing of salad plants for fall and early winter use. One of his big problems now is the building of cellar storage rooms. Junior club work is under way with strawberries, grapes, pop-corn, flowers, cabbage and sweet potatoes, and garden spraying. He has held more than 100 demonstrations and meetings, reaching

thereby about 4,000 people. He also helps some with the orchard demonstration work.

Mr. Fitch has been very busy with 99 seed potato demonstrations, using northern certified seed, northern seed not certified but sold locally, and home grown seed from northern stock. He had a splendid set of photographs taken of the crops as soon as dug and graded. This work was conducted in 35 counties.

SOUTH DAKOTA.

Mr. A. L. Ford has had insect control work for three years and this year took on the orchard and garden extension work. The control of grasshopper, army worm, and chinch bug outbreaks does not leave much time for other work in the summer and fall. However, considerable was done last spring in pruning, spraying and the cutting out of blight.

KANSAS.

Mr. L. C. Williams had the assistance of Mr. A. A. Glen for 3 months during the spring. The big campaign of the year was the spring cleaning up of orchards. Publicity on this was started last November by use of local papers, farm papers, news letters, circular letters, lectures, demonstrations, etc., to arouse the public on this point. Local demonstrators were selected in 15 counties for this work. Twenty pruning tours covering 4 orchards per day were held. There were 10 extension schools of 2 days each with an average attendance of 25 people. The afternoons were usually used for tree pruning in orchards. Two visits were made to each of the 60 cooperative orchard demonstrations in spraying, pruning and cultivating, and records of results were obtained. Twelve new acre farm orchards were planted last spring, this makes 101 planted in the last few years. Sixty-nine of these in 23 counties are to be demonstration pruning orchards for 5 years. An orchard tour lasting 4 days and covering 5 counties was held; part of the time 250 people were in the tour. Mr. Williams spent 3 months in working up a wonderfully fine college exhibit for the 3 state fairs. Mr. A. G. Kelly, Extension Entomologist, gave about 35 orchard spraying and 8 pruning demonstrations in connection with his other work.

NEBRASKA.

Mr. Hoppert continued the fruit and landscape work and has taken on some potato extension work. Fifty pruning demonstrations were given last spring and spraying demonstrations were given throughout the season in 8 orchards. Demonstrations were given in the control of aphids on cantaloupes with nicotine sulphate dust. In the landscape work meetings were addressed and plans drawn for 5 farmsteads and 1 church. Judging was done at 6 county fairs.

Concerning the spread of influence, Mr. Hoppert has some interesting results of spraying demonstrations given in 1920 and 1921. In 4 counties 62 orchards were sprayed this year as a result of 7 demonstrations given one or two years ago. In another county 25 orchards were sprayed this year as a result of demonstrations given in 1920.

W. R. Beattie,
Extension Horticulturist.
C. P. Close,
Extension Pomologist.

